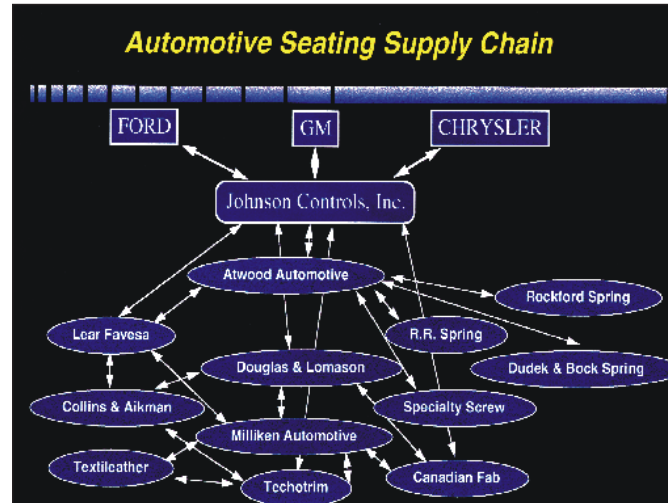




# MANUFACTURING ASSEMBLY PILOT PROJECT COMPRESSES LEAD TIME IN SUPPLY CHAIN

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## Payoff

Under the Manufacturing Assembly Pilot (MAP) project sponsored by the Defense Advanced Research Projects Agency (DARPA) and managed by the Materials and Manufacturing Directorate, the Automotive Industry Action Group (AIAG) improved the flow of material and information up and down the automotive seating supply chain. The MAP project reduced the time it took in order to go from one of the Big-Three automobile companies down to the lowest tier of the seating supply chain, from 28 days to 11 days, a 58 percent reduction.

## Accomplishment

The Manufacturing Assembly Pilot project has created specific, quantifiable improvements in the flow of material and information within the automotive industry seating supply chain, while increasing the speed and quality of this flow and reducing costs. Lead time was reduced by 58 percent and error rates were reduced by 72 percent. Implementing the results of this project throughout the entire United States automotive supplier network is expected to save \$1.07 billion. It also provides technologies and business practices that will lead to improvements in material flow within the aerospace industrial supply chain.

## Background

With fifty percent of a typical supplier's costs contained in its supply base, the ability of the lower tier suppliers to meet requirements, such as just-in-time delivery and reconfigurable electronic data interchange, is a critical factor for a cost effective and agile manufacturing capability. For lower-tier suppliers, scheduling information is often late or inaccurate and large inventories are carried just in case there is a problem. Little or no communication exists between suppliers, and this, coupled with the problems mentioned above, leads to high costs in premium transportation, obsolete material and unplanned changeovers in manufacturing. Material flows because suppliers have a "whatever it takes" attitude and the cost of doing business in this way is buried in the supply chain. This is considerably different than at the first tier. In the case of Johnson Controls Inc., world class practices now exist between the original equipment manufacturer and the first tier supplier. Single-piece flow manufacturing is in place for the seats, which are delivered in sequence so they can be unloaded and installed directly as cars or trucks move along the assembly line. Inventories are almost nonexistent in this environment, quality is high and material is moved to the next manufacturing operation "just-in-time." Distorted or truncated information can increase cost in the form of "just-in-case" inventories, premium freight and unplanned production changeovers. The use of an electronic system of commerce has also increased the accuracy of that information. The MAP improvements are a result of a cooperative agreement jointly funded by DARPA and the AIAG, which focuses on developing improvements in material flow to build a strong manufacturing support infrastructure for automotive and aerospace industries.